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EXAMINER

MOE, AUNG SOE

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/325,431

Applicant(s)

ORIMOTO ET AL

Examiner

Aung S. Moe

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12 and 14-38 is/are pending in the application.
- 4a) Of the above claim(s) 2, 4, 16, 17 and 19-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5-10, 12, 14, 15, 18 and 23-38 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 3, 5-10, 12, 14-15, 18 and 23-38 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 30-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 31 recites the limitation "the multi-lens camera mode" in line 13. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 30 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamaguchi (Translation of JP 64-007792).

Regarding claim 30, Yamaguchi '792 discloses an image-capturing apparatus (i.e., see Fig. 1), comprising: a first image-capturing unit (11) having a first image-capturing optical system (i.e., the first camera 12 contains a lens; see Fig. 1); and a second image-capturing unit having a second image-capturing optical system (i.e., the second camera 15 contains a lens; see Fig. 1), the second image-capturing unit being detachably connected to the first image-capturing unit (i.e., noted from Fig. 1 that the camera 15 is detachably connected to the camera 12; see page 6 and 7 of Translation); wherein the second image-capturing unit (15) is connected with the first image-capturing unit (i.e., the camera 12; see Fig. 1), so that the first image-capturing unit (12) and the second image-capturing unit (i.e., the cameras 12 and 15) are controlled in accordance with image information (i.e., as shown in Figs. 2 and 3, when the cameras 12 and 15 are mounted to generate a stereoscopic image, the drive unit 19 supplies control signals to circuit 20 to control the L and R image information obtained by the camera 12 and 15 respectively) obtained by the first image-capturing unit and the second image-capturing unit (i.e., see page 8 and 9 of Translation); wherein the first image-capturing unit (12) having a first connecting part (13) that mechanically and directly connects a second connecting part (16) of the second image-capturing unit (15) so as to form a single unit (i.e., see Figs. 1; see page 6 of Translation), wherein said first and second image-capturing units (12, 15) cooperatively provide **at least one of** a panoramic imaging mode (i.e., note the stereoscopic image pickup mode when the cameras 12 and 15 are connected as a single unit; see the abstract and page 8 of the

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Translation) and a three-dimensional imaging mode when operative connected in the multi-lens mode (i.e., when the cameras 12 and 15 are connected to formed as a multi-lens mode).

However, the above-mentioned claimed limitations are well known in the art as evidenced by Suemoto '067. In particular, Suemoto '067 clearly teaches that the first image-capturing unit having a first connection part that mechanically and directly connects a second connection part (i.e., noted that the connections parts 11 and 91 of the first and second camera units as shown in Fig. 1 of Suemoto '067) of the second image-capturing unit so as to form a single unit (i.e., noted that that the camera units 10 and 90 can be connected to form a single unit as shown in Fig. 1).

Regarding claim 31, Yamaguchi '792 discloses wherein each of the first and second image-capturing units comprises an imaging device for converting a light from a subject into an electric signal, and captures an image as an electronic image (i.e., noted that the cameras 12 and 15 contains an imaging device which is capable of capturing the electronic image; see page 3, 8 and 9 of Translation).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 3, 5-6, 7, 9-10, 12, 14-15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suemoto et al. (U.S. 6,151,067) in view of Iwashita et al. (U.S. 4,427,280), Vockenhuber (U.S. 4,148,072) and Yamaguchi (Translation of JP 64-007792).

Regarding claim 1, Suemoto '067 discloses an image-capturing apparatus (i.e., Fig. 1; noted the image-capturing apparatus 10/90), comprising: a first image-capturing unit having a first image-capturing optical system (i.e., noted the camera 10 of Fig. 1); and a second image-capturing unit having a second image-capturing optical system (i.e., noted the camera 90 as shown in Fig. 1), the second image-capturing unit being detachably connected to the first image-capturing unit (i.e., noted that the camera 10 and 90 may be detachably connected via the elements' 11 and 91; see col. 11, lines 25-55); wherein the first image-capturing unit is an electronic camera (i.e., noted that both cameras 90 and 10 are an electronic camera), an interface for transmitting data between the first image-capturing unit and the second image-capturing unit (i.e., noted the of multi-connectors 91/11 as an interface for transmitting data between the camera units 10 and 90; see col. 11, lines 25+).

Furthermore, Suemoto '067 discloses that said first image-capturing unit comprising: a first connection part that mechanically and directly connects a second connection part (i.e., noted that the connections parts 11 and 91 as shown in Fig. 1 of Suemoto '067) of the second image-capturing unit so as to form a single unit (i.e., noted that that the camera units 10 and 90 can be connected to form a single unit as shown in Fig. 1), however, Suemoto '067 does not explicitly show the use of join holes for connecting with joints of the second image-capture unit as claimed.

However, when the use of joint holes in the camera body for connecting with the joints portion of another external device is well known in the art as evidenced by Iwashita '280. In particular, Iwashita '280 teaches the use of joint holes (i.e., noted the holes 2-4 of the camera 1 as shown in Fig. 4) for connecting with joints (i.e. the joints elements 8-10) of the external unit. In view of this, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to provide the joint holes on the body of camera unit 10 of Suemoto '067 and further providing the joints on the second camera unit (90) of Suemoto '067, so that it would allow the user to easily and conveniently connect the camera unit (10) with the second camera unit (90) by just aligning the joint holes of the camera unit (10) with the joints of the camera unit (90) as suggested by Iwashita '280 (i.e., col. 2, lines 25+ of Iwashita '280)

Moreover, it is noted that although Suemoto '067 shown the camera 90 comprise a zoom lens (i.e., noted the Zoom camera 90 as discussed in col. 11, lines 25+), and the camera 10 also comprises a zoom function (i.e., see col. 12, lines 10+), Suemoto '067 does not explicitly show wherein a lens controller driving the zoom lenses of the first and second image-capturing optical

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systems to equalize zooming magnifications of the first and second image-capturing optical systems as recited in the present claimed invention.

However, the above-mentioned claimed limitations are well-known in the art as evidenced by Vockenhuber '072. In particular, Vockenhuber '072 teaches the use of the first and second image-capturing optical systems comprising a zoom lens (i.e., noted the zoom lenses 27/24 and 36/23 of the first and second cameras as shown in Fig. 1; col. 3, lines 3+), and a lens controller for driving the zoom lenses of the first and second image-capturing optical systems to equalized zooming magnification of the first and second image-capturing optical system (i.e., col. 3, lines 50-56).

In view of the above, having the system of **Suemoto '067** and then given the well established teaching of Vockenhuber '072, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Suemoto '067** as taught by Vockenhuber '072, since Vockenhuber '072 stated at col. 1, lines 65+ that such a modification would provide a good quality picture on the reproducing device when focusing of the same object by the cameras.

With respect to the amended portion of claim 1, it is noted that Suemoto '067 does not explicitly show that the first and second image-capturing units cooperatively provide **at least one** of a panoramic imaging mode (i.e., Stereoscopic Mode) and a three-dimensional imaging mode when operatively connected in a multi-lens camera mode as amended in present claimed invention.

However, the above-mention claimed limitations are well known in the art as evidenced by Yamaguchi '792. In particular, Yamaguchi '792 teaches the use of first and second camera

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units (12, 15; see Fig. 1), and the second camera (15) is being detachably connecting the first camera unit (12) in a multi-lens camera mode (i.e., noted the stereoscopic mode is achieved by using a multiple lens of the both camera units 12 and 15 as shown in Fig. 1), wherein the first and second image-capturing units (12, 15) cooperatively provide **at least one** of a panoramic imaging mode (i.e., Stereoscopic Mode) and a three-dimensional imaging mode when operatively connected in a multi-lens camera mode as amended in present claimed invention (i.e., see Figs. 1 and page 7-9 of Translation).

In view of the above, having the system of **Suemoto '067** and then given the well established teaching of Yamaguchi '792, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Suemoto '067** as taught by Yamaguchi '792, since Yamaguchi '792 stated at page 4 of the translation that such a modification would enhance the operability by providing stereoscopic image pickup device wherein at the time of stereoscopic image pickup, it becomes two lens cameras, and at the time of one lens image pickup, it can become single lens camera

Regarding claim 3, the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '072 discloses a connection detector for detecting the first image-capturing unit is connected to at least the second image-capturing unit (i.e., noted that the detector of the camera is capable of detecting the presence of an external video input connected to the video input terminal thereof; see the Abstract and Fig. 8 of Suemoto '067);

an information transmitter for transmitting information between the first image-capturing unit and the at lest the second image-capturing unit (i.e., noted that with the use of connector 11

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and 91, the audio/video and other information may be transmitted between the camera 10 and other devices such as the camera 90; see col. 5, lines 50+ of Suemoto '067); and

a controller for synchronizing or interlocking image-capturing operation of the first image-capturing unit and at least the second image-capturing unit (i.e., noted that when the camera 90 is connected to the camera 10, the controller devices 15/12 of the camera 10 is capable of interlocking image-capturing operation of the camera 10 and 90 by allowing the camera 10 as a video tape recorder of the camera 90 and designed to be capable of edit-searching as discussed in col. 11, lines 25+ of Suemoto '067; also see Fig. 3 of Yamaguchi '792).

Regarding claim 5, the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '072 wherein each of the first and second image-capturing units has a power source (i.e., noted that the camera 10 of Suemoto '067 contain the power block 24, therefore, since the camera 90 can operate when the not connected to the other device, the camera 90 must include a power source in order to perform the image capturing functions. Thus, the power source is considered as an inherent feature of the conventional camera 90 as shown in Fig. 1 of Suemoto '067).

Regarding claim 6, the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '072 discloses a power-supplying device for supplying power from a power source of the first image-capturing unit to at least the second image-capturing unit (i.e., col. 11, lines 50-55 of Suemoto '067; and noted from Fig. 1 that the power source 43/44 of the camera 4 is used for supplying the power to the camera 1 of Vockenhuber '072).

Regarding claim 7, the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '072 discloses wherein the second image-capturing unit records an image at

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the same time as the first image-capturing unit does in synchronism with an image recording start signal outputted from the first image-capturing unit (i.e., noted that the image captured by the camera 10 of Suemoto '067 is functioning as a VTR for the camera 90 when they are connected, thus, the image-capturing of the camera units 10 and 90 must be in synchronism with each other based on the image-capturing start signal of the camera 90; see col. 11, lines 25+ of Suemoto '067).

Regarding claim 9, the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '072 discloses wherein the first image-capturing unit comprises **at least one of**: an AE device for measuring an AE value for controlling automatic exposure; an AWB device for measuring an AWB value for automatically controlling white balance (i.e., noted that the camera signal processor 20 contains an AWB circuit; thus, the an AWB value must be included in the system of Suemoto '067; see col. 6, lines 1+); and an AF device for measuring an AF value for automatically controlling a focal point; wherein the first image-capturing unit automatically controls **at least one of** the exposure, the white balance and the focal point in accordance with said at least one of AE value, the AWB value and the AF value obtained by the first image-capturing unit (i.e., see col. 6, lines 1+ of Suemoto '067).

Regarding claim 10, the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '072 wherein the second image-capturing unit comprises **at least one of**: an AE device for controlling automatic exposure; an AWB device for measuring an AWB value for automatically controlling white balance; and an AF device for measuring an AF value for automatically controlling a focal point (i.e., noted the when the zooming operation of the camera is performed, the camera has to automatically control the focal point of the camera in order to

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maintain focus of the image captured by the camera, thus, it is considered obvious to includes conventionally known AF device in the system of Suemoto '067 at the time the invention was made to obtain focused image signal); wherein the first image-capturing unit and the second image-capturing unit share measuring operations and measured results (i.e., see col. 3, lines 45+ , col. 3, lines 50+ and col. 6, lines 35+ of Kaneko '371; and col. 11, lines 25+ of Suemoto '067).

Regarding claim 12, the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '072 discloses wherein each of the first and second image-capturing optical systems comprises a non-contact communication device for transmitting information between the first image-capturing unit (the element 4 of Vockenhuber '072) and the second image-capturing unit (the element 1 of Vockenhuber '072) by using electromagnetic waves (i.e., see col. 6, lines 55+ of Vockenhuber '072).

Regarding claim 14, the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '072 discloses wherein an external storage device is detachably attached to the electronic camera through the slot (i.e., as shown in Fig. 1 of Suemoto '067, the recorder having the multi-connector 31 can be detachably connected to the connection slot 11 of the camera 10).

Regarding claim 15, the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '072 discloses the image-capturing unit comprising: an imaging part including an imaging device for converting a light from a subject into an electric signal, the imaging part being constructed in the same manner as the image-capturing optical system loaded in the electronic camera (i.e., noted the camera 90 is a video camera which is similar to the camera 10 with a zooming function and outputting the video/audio signals thereof, thus, the camera 90 must includes the imaging device such as the CCD sensor as shown in Fig. 2; see col. 11, lines 25+ of

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Suemoto '067); a joint capable of jointing with the connecting part of the electronic camera(i.e., noted from the Fig. 1 of Suemoto '067 that the multi-connector 11 of the camera 10 is function as a joint for jointing the connecting part of the camera 90 and the other connecting members of Suemoto '067); and a second information transmission part connectable with the information transmission part of the electronic camera (i.e., noted that each camera 10 and 90 contain a corresponding information transmission parts, such that 11 and 91; e.g., see Fig. 14, the elements 11 & 301 of Suemoto '067).

Regarding claim 18, the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '072 discloses wherein each of the first and second image-capturing units comprises an imaging device for converting a light from a subject into an electric signal, and captures an image as an electronic image (i.e., noted from Figs. 1 and 2 of Suemoto '067 that the cameras 10 and 90 are a video camera having the CCD sensor; noted from col. 3, lines 15+ and col. 7, lines 5-10; Vockenhuber '072 discloses the use of first and second TV camera together).

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suemoto '067 in view of Iwashita '280, Yamaguchi '792 and Vockenhuber '325 as applied to claims discussed above, and further in view of Kaneko (U.S. 4,920,371).

Regarding claim 8, it is noted that the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '325 does not explicitly stated that an image capture timing of the second image-capturing unit is offset from a reference image capturing timing of the first image-capturing unit by a predetermined time to thereby continuously capture images with the first and second image-capturing units.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Kaneko '371. In particular, Kaneko '371 teaches that it is conventionally known to offset the image capture timing of the second image-capturing unit from a reference image capturing timing of the first image-capturing unit by a predetermined time to thereby continuously capture images with the first and second image-capturing units (i.e., noted from Figs. 3 and 5, the timing of the camera 1 is offset from a reference image capturing timing of the camera 2 by a predetermined time, e.g., the times t1-t5, thereby continuously capture images with the first and second camera units; see col. 3, lines 20+, col. 7, lines 5+).

In view of this, having the system of **Suemoto '067** and then given the well established teaching of Kaneko '371, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Suemoto '067** as taught by Kaneko '371, since Kaneko '371 stated at col. 1, lines 60+ and col. 2, lines 15+ that such a modification would allow photographing operation of the first camera unit and the second camera unit at the same timing synchronously with the strobe light emission device.

8. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suemoto '067 in view of Iwashita '280, Yamaguchi '792 and Vockenhuber '072 as applied to claims discussed above, and further in view of Ishikawa et al. (U.S. 6,549,650).

Regarding claim 23, it is noted that the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '072 does not explicitly show the use of a gain adjuster for adjusting a gain of a video signal to equalize a video signal level of the second image-capturing unit to a video signal level of the first image-capturing unit.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 teaches that it is conventionally well-known to use a gain adjuster for adjusting a gain of a video signal to equalize a video signal level of the second image-capturing unit to a video signal level of the first image-capturing unit (i.e., see Fig. 25; Noted the AGC circuits 1021/1201 and the TG 1025), so that the image signal levels generated by the left camera (1020) and the right camera (1200) may be synchronously adjusted to provide a good stereoscopic view (i.e., see col. 27, lines 55+ and col. 29, lines 40+).

Therefore, having the system of **Suemoto '067** and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Suemoto '067** as taught by Ishikawa '650, since Ishikawa '650 stated at col. 9, lines 45+ and col. 29, lines 40++ that such a modification would provide a good stereoscopic view by adjusting the image signal levels of the first camera (1020) and the second camera (1200).

9. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suemoto '067 in view of Iwashita '280, Yamaguchi '792 and Vockenhuber '072 as applied to claims discussed above, and further in view of Ishikawa et al. (U.S. 6,549,650).

Regarding claim 24, although combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '072 show the use of display device (Figs. 3 and 4, the element 65 of Vockenhuber '072; and the OSD as shown in Fig. 1 of Suemoto '067) for displaying the image signal captured by the first and the second camera, the combination of Suemoto '067, Iwashita '280 and Vockenhuber '072 does not explicitly show an image display having a parallax barrier

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displaying layer on a display plane, the parallax barrier display layer displaying a parallax barrier having a pattern in which light transmissible parts and light shielding parts are arranged alternately; and a signal processor for displaying, on the image display means, one of an image pattern in which strip-shaped image fragments representing a left-eye image and a right-eye image are arranged alternately, and an image pattern in which strip-shipped image fragments representing a plurality of images are arranged in order; wherein one of an image capable of being seen three-dimensionally and an image capable of being seen differently according to viewing directions is displayed as recited in the present claimed invention.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 teaches that it is conventionally well-known to use a parallax barrier display layer on a display plane, the parallax barrier display layer displaying a parallax barrier having a pattern in which light transmissible parts and light shielding parts are arranged alternately (i.e., Fig. 10B; col. 2, lines 35+, col. 5, lines 50+, and col. 17, lines 30+); and a signal processor for displaying, on the image display means, one of an image pattern in which strip-shaped image fragments representing a left-eye image and a right-eye image are arranged alternately, and an image pattern in which strip-shipped image fragments representing a plurality of images are arranged in order; wherein one of an image capable of being seen three-dimensionally and an image capable of being seen differently according to viewing directions is displayed (i.e., Figs. 8C and 10A-10B; col. 2, lines 35+, col. 5, lines 50+, and col. 17, lines 30+) as recited in the present claimed invention.

Therefore, having the system of **Suemoto '067** and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of

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the invention was made to modify the system of **Suemoto '067** as taught by Ishikawa '650, since Ishikawa '650 stated at col. 9, lines 45+ and col. 29, lines 40++ that such a modification would provide a good stereoscopic view by adjusting the parallax of the principal object in the images.

Regarding claim 25, the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 Vockenhuber '072 and Ishikawa '650 shows wherein the first and second image-capturing units capture images at different focal positions, and focused areas in the images are combined to compose an image that is focused over the whole image (i.e. It is noted that Vockenhuber '072 shows the first and second image-capturing units at different focal positions and Ishikawa '650 teaches that the images are combined to compose an image that is focused over the whole image, thus, the claimed limitations of the present claimed invention is considered obvious over the combination of Vockenhuber '072 and Ishikawa '650 for the same reasons as discussed above; see Figs. 3 and col. 5, lines 40+ of Vockenhuber '072; Figs. 21B, 50 and 51 of Vockenhuber '072).

Regarding claim 26, it is noted that although the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '072 does not disclose all the limitations as recited in the claim 26, such limitations are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 teaches wherein depth distribution information is extracted from the images captured by the first and second image-capturing units to perform special effects (i.e., a stereophonic effect) for areas that are not at a predetermined image-capturing distance (i.e., col. 41, lines 45+, col. 42, lines 10+).

In view of the above, having the system of **Suemoto '067** and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at

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the time of the invention was made to modify the system of **Suemoto '067** as taught by Ishikawa '650, since Ishikawa '650 stated at col. 9, lines 45+ and col. 29, lines 40++ that such a modification would provide a good stereoscopic view thereof.

10. Claims 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suemoto '067 in view of Iwashita '280, Yamaguchi '792 and Vockenhuber '072 as applied to claims discussed above, and further in view of Fellegara et al. (U.S. 6,441,854).

Regarding claim 27, although Suemoto '067 shows the use of display device (i.e., noted the OSD of the camera 10 as shown in Fig. 2) for the image-capturing unit 10 and the different external units may be connected the image-capturing unit, such as the electronic camera 10, the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '072 does not explicitly show a shot number display for displaying a number of possible shots according to a number of connected image-capturing units.

However, it is conventionally well-known in the art to use a display for displaying the storage/memory condition, such as the number of possible shots, of the camera device as taught by Fellegara '854 (i.e., see noted the LCD 22 of the camera as shown in Fig. 3). In particular, Fellegara '854 teaches that when the camera having first and second image-capturing devices (i.e., Noted from Fig. 6 that the camera 10 comprises the first image-capturing device 70 and the second capturing device 60) and the display device 22 of the image-capturing device is capable of displaying a number of possible shots according to the first and second image-capturing units (i.e., col. 4, lines 40+ and col. 9, lines 45+).

In view of this, having the system of Suemoto '067 having a display (i.e., Fig. 2, the OSD) and wherein different number of device may be connected to the camera system and then given the well-established teaching of Fellegara '854, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Suemoto '067 by providing a display device capable of displaying the storage condition of the different image capturing devices (i.e., storage condition of the digital camera and the film camera) as taught by Fellegara '854, so that it would obviously enhance the user's convenient by allowing the user to determine the condition of the storage medium before capturing the images, thereby effective memory usage may be realized.

Regarding claim 28, the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '072 does not explicitly show a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously, in an image file and automatically given a file name to the image file, the file name being distinguishable from a file name of an image file in which one piece of image data is recorded.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Fellegara '854. In particular, Fellegara '854 teaches the use of a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously (i.e., noted the controller 120 for managing the image information captured by the digital and film camera thereof; see Fig. 6), in an image file and automatically given a file name to the image file, the file name being distinguishable from a file

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name of an image file in which one piece of image data is recorded (i.e., Figs. 7 & 14; col. 8, lines 50+ and col. 16, lines 15+).

In view of the above, having the system of **Suemoto '067** and then given the well established teaching of Fellegara '854, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Suemoto '067** as taught by 66, so that it would obviously provide the quick image review of the different images stored in the storage medium, since the image files are easily distinguishable from the corresponding given file name as taught by Fellegara '854.

Regarding claim 29, the combination of Suemoto '067, Iwashita '280, Yamaguchi '792 and Vockenhuber '072 does not explicitly show a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously, in separate image files and automatically giving file names to the separate image files, the file names indicating that the separate image files are related to one another.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Fellegara '854. In particular, Fellegara '854 teaches the use of a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously (i.e., noted the controller 120 for managing the image information captured by the digital and film camera thereof; see Fig. 6), in separate image files and automatically giving file names to the separate image files (i.e., Figs. 7 & 14; col. 8, lines 50+ and col. 16, lines 15+), the file names indicating that the separate image files are related to one another (i.e., noted that based on the ID, IIF and IDF file names are used to indicate relation of the separate image files; see col. 17, lines 1+ and col. 19, lines 5+).

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In view of the above, having the system of **Suemoto '067** and then given the well established teaching of Fellegara '854, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Suemoto '067** as taught by 66, so that it would obviously provide the quick image review of the different images stored in the storage medium, since the image files are easily distinguishable from the corresponding given file name as taught by Fellegara '854.

11. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi '792 in view of Ishikawa et al. (U.S. 6,549,650).

Regarding claim 32, it is noted that Yamaguchi '792 does not explicitly show the use of a gain adjuster for adjusting a gain of a video signal to equalize a video signal level of the second image-capturing unit to a video signal level of the first image-capturing unit.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 teaches that it is conventionally well-known to use a gain adjuster for adjusting a gain of a video signal to equalize a video signal level of the second image-capturing unit to a video signal level of the first image-capturing unit (i.e., see Fig. 25; Noted the AGC circuits 1021/1201 and the TG 1025), so that the image signal levels generated by the left camera (1020) and the right camera (1200) may be synchronously adjusted to provide a good stereoscopic view (i.e., see col. 27, lines 55+ and col. 29, lines 40+).

Therefore, having the system of **Yamaguchi '792** and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by Ishikawa '650, since Ishikawa '650 stated at col. 9, lines 45+ and col. 29, lines 40++ that such a modification would provide a good stereoscopic view by adjusting the image signal levels of the first camera (1020) and the second camera (1200).

12. Claims 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi '792 in view of Ishikawa et al. (U.S. 6,549,650).

Regarding claim 33, Yamaguchi '792 does not explicitly show an image display having a parallax barrier displaying layer on a display plane, the parallax barrier display layer displaying a parallax barrier having a pattern in which light transmissible parts and light shielding parts are arranged alternately; and a signal processor for displaying, on the image display means, one of an image pattern in which strip-shaped image fragments representing a left-eye image and a right-eye image are arranged alternately, and an image pattern in which strip-shipped image fragments representing a plurality of images are arranged in order; wherein one of an image capable of being seen three-dimensionally and an image capable of being seen differently according to viewing directions is displayed as recited in the present claimed invention.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 teaches that it is conventionally well-known to use a parallax barrier display layer on a display plane, the parallax barrier display layer

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displaying a parallax barrier having a pattern in which light transmissible parts and light shielding parts are arranged alternately (i.e., Fig. 10B; col. 2, lines 35+; col. 5, lines 50+, and col. 17, lines 30+); and a signal processor for displaying, on the image display means, one of an image pattern in which strip-shaped image fragments representing a left-eye image and a right-eye image are arranged alternately, and an image pattern in which strip-shipped image fragments representing a plurality of images are arranged in order; wherein one of an image capable of being seen three-dimensionally and an image capable of being seen differently according to viewing directions is displayed (i.e., Figs. 8C and 10A-10B; col. 2, lines 35+, col. 5, lines 50+, and col. 17, lines 30+) as recited in the present claimed invention.

Therefore, having the system of **Yamaguchi '792** and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by Ishikawa '650, since Ishikawa '650 stated at col. 9, lines 45+ and col. 29, lines 40++ that such a modification would provide a good stereoscopic view by adjusting the parallax of the principal object in the images.

Regarding claim 34, the combination of Yamaguchi '792 and Ishikawa '650 shows wherein the first and second image-capturing units capture images at different focal positions, and focused areas in the images are combined to compose an image that is focused over the whole image (i.e. It is obvious from Fig. 1 of Yamaguchi '792, that the first and second image-capturing units 12 and 15 are at different focal positions and Ishikawa '650 teaches that the images are combined to compose an image that is focused over the whole image, thus, the claimed limitations of the present claimed invention is considered obvious over the combination

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of Yamaguchi '792 and Ishikawa '650 for the same reasons as discussed above; see Fig. 1 of Yamaguchi '792; Figs. 8C and 10A-10B; col. 2, lines 35+, col. 5, lines 50+, and col. 17, lines 30+ of Ishikawa '650).

Regarding claim 35, it is noted that Yamaguchi '792 discloses that the first and second camera (12, 15) units perform special effects (i.e., the Stereoscopic effect), and does not explicitly show depth distribution information which is extract from the captured images to perform special effects for areas that are not at a predetermined image-capturing distance. However, such features are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 teaches wherein depth distribution information is extracted from the images captured by the first and second image-capturing units to perform special effects (i.e., a stereophonic effect) for areas that are not at a predetermined image-capturing distance (i.e., col. 41, lines 45+, col. 42, lines 10+).

In view of the above, having the system of **Yamaguchi '792** and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by Ishikawa '650, since Ishikawa '650 stated at col. 9, lines 45+ and col. 29, lines 40++ that such a modification would provide a good stereoscopic view thereof.

13. Claims 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi '792 in view of Fellegara et al. (U.S. 6,441,854).

Regarding claim 36, Yamaguchi '792 does not explicitly show a shot number display for displaying a number of possible shots according to a number of connected image-capturing units.

However, it is conventionally well-known in the art to use a display for displaying the storage/memory condition, such as the number of possible shots, of the camera device as taught by Fellegara '854 (i.e., see noted the LCD 22 of the camera as shown in Fig. 3). In particular, Fellegara '854 teaches that when the camera having first and second image-capturing devices (i.e., Noted from Fig. 6 that the camera 10 comprises the first image-capturing device 70 and the second capturing device 60) and the display device 22 of the image-capturing device is capable of displaying a number of possible shots according to the first and second image-capturing units (i.e., col. 4, lines 40+ and col. 9, lines 45+).

In view of this, having the system of Yamaguchi '792 and then given the well-established teaching of Fellegara '854, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Yamaguchi '792 by providing a display device capable of displaying the storage condition of the different image capturing devices (i.e., storage condition of the digital camera and the film camera) as taught by Fellegara '854, so that it would obviously enhance the user's convenient by allowing the user to determine the condition of the storage medium before capturing the images, thereby effective memory usage may be realized.

Regarding claim 37, Yamaguchi '792 does not explicitly show a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously, in an image file and automatically given a file name to the image file, the file name being distinguishable from a file name of an image file in which one piece of image data is recorded.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Fellegara '854. In particular, Fellegara '854 teaches the use of a file manager for

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recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously (i.e., noted the controller 120 for managing the image information captured by the digital and film camera thereof; see Fig. 6), in an image file and automatically given a file name to the image file, the file name being distinguishable from a file name of an image file in which one piece of image data is recorded (i.e., Figs. 7 & 14; col. 8, lines 50+ and col. 16, lines 15+).

In view of the above, having the system of **Yamaguchi '792** and then given the well established teaching of Fellegara '854, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by 66, so that it would obviously provide the quick image review of the different images stored in the storage medium, since the image files are easily distinguishable from the corresponding given file name as taught by Fellegara '854.

Regarding claim 38, Yamaguchi '792 does not explicitly show a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously, in separate image files and automatically giving file names to the separate image files, the file names indicating that the separate image files are related to one another.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Fellegara '854. In particular, Fellegara '854 teaches the use of a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously (i.e., noted the controller 120 for managing the image information captured by the digital and film camera thereof; see Fig. 6), in separate image files

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and automatically giving file names to the separate image files (i.e., Figs. 7 & 14; col. 8, lines 50+ and col. 16, lines 15+), the file names indicating that the separate image files are related to one another (i.e., noted that based on the ID, IIF and IDF file names are used to indicate relation of the separate image files; see col. 17, lines 1+ and col. 19, lines 5+).

In view of the above, having the system of **Yamaguchi '792** and then given the well established teaching of Fellegara '854, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by 66, so that it would obviously provide the quick image review of the different images stored in the storage medium, since the image files are easily distinguishable from the corresponding given file name as taught by Fellegara '854.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Pat 6,864,911 shows a multi-lens camera system.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period


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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung S. Moe whose telephone number is 571-272-7314. The examiner can normally be reached on Mon-Fri (9-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 571-272-7308. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Aung S. Moe
Primary Examiner
Art Unit 2612

A. Moe
June 24, 2005